

Remarks

In view of the foregoing amendments and the following remarks, reconsideration of the present patent application is respectfully requested.

Claim 4 has been amended to more clearly define the present invention. Support for this amendment may be found throughout the specification and in particular on page 23, line 30 – page 24, line 3.

Claim 15 has been amended to more clearly define the present invention. Support for this amendment may be found throughout the specification and in particular on page 36, lines 10 – 13.

Claims 6, 7, 13, and 18 have been amended to more clearly define the present invention. Support for these claims can be found throughout the specification and in particular on page 24, line 29 through page 25, line 4. The claim amendments introduce no new matter.

Claim 12 has been deleted.

Rejection under 35 U.S.C. §112:

Claims 6, 7, 12 and 18 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctively claim the subject matter which Applicant regards as the invention. With respect to claims 6, 7 and 18 the Examiner alleges Applicant does not explain what is meant by the phrase: “wherein a difference in the number of reaction tubes configured in the regions of reduction tubes divided by at least two circulation passages is within 3%.

Applicant’s have amended claims 6, 7 and 18 to more clearly define a value calculated by the formula:

$$\left\{ \left(\frac{(\text{number of reaction tubes in individual regions})}{(\text{average number of reaction tubes in the regions})} \right) - 1 \right\} \times 100\%$$

Accordingly, Applicant’s respectfully request that the 35 U.S.C. § 112, second paragraph rejection with respect to claims 6, 7 and 18 be reconsidered and withdrawn.

Claim 12 is rejected because the Examiner alleges there is insufficient antecedent basis for the limitation “the gas”.

Applicant’s have deleted claim 12 and respectfully request that the rejection with respect to claim 12 be withdrawn.

Rejection under 35 U.S.C. §102/103:

The previously presented Claims 1-5, 8-11, 15-17 and 19 were rejected under 35 U.S.C. §102(b) as anticipated by Ruppel et al. (U.S. Patent No. 5,821,390) and alternatively rejected under 35 U.S.C. §103(a) as being obvious over Ruppel et al. Applicants respectfully traverse.

The Examiner alleges that Ruppel et al. discloses a reactor as claimed in claim 1. However, the Examiner acknowledges that Ruppel et al. "fails to teach that the reaction tubes are restrained at the center distanced 1.2 to 1.4 times the outside diameter of the reaction tube." Also, the Examiner alleges that claims 2-5, 8-11, 15-17 and 19, which are dependent from claim 1, are anticipated and/or obvious over Ruppel et al.

Claims 12-14 were objected to as depending from a rejected base claim but would be allowed if rewritten in independent form. Applicants have amended claim 1 to include the limitations from original claim 12.

The amendment incorporating the limitations of allowable claim 12 into claim 1 should obviate the 35 U.S.C. §102/103 rejections with respect to independent claim 1. Claim 13 has been rewritten in independent form. Claim 14 depends from claim 13. Claims 2-11 and 15-19 depend from claim 1 and are believed to be allowable for the same reasons claim 1 is allowable.

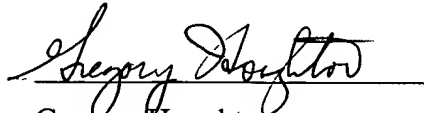
Accordingly, claims 1-11 and 13-19 should be allowable.

Based on the foregoing, Applicants respectfully request that the 35 U.S.C. § 102/103 rejections with respect to claims 1-5, 8-11, 15-17 and 19 be reconsidered and withdrawn.

Conclusion

The application is now believed to be in a condition for allowance and an early notification thereof is respectfully requested. The Examiner is invited to contact the undersigned should they believe this would expedite prosecution of this application. It is believed no fee is required. The Commissioner is authorized to charge any deficiency or credit any overpayment to Deposit Account No. 13-2165.

Respectfully submitted,



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